REMARKS

This amendment is being filed pursuant to the concurrent filing of an RCE.

Support for the amendment to claim 1 is as follows:

1. The core and the external layer are both zeolites as stated on page 7, last paragraph of the specification.

2. The zeolites, nevertheless, differ with respect to their structural types, i.e. the crystallographic structure of the core is different from that of the external layer as stated in the specification, page 7, last paragraph and page 5, second paragraph.

3. The grains have a spherical shape, as indicated on page 8, lines 15-17.

The term "consisting essentially of" is now used instead of the previous use of "in the form of", thereby excluding materials which would adversely affect the novel and basic characteristics of the catalyst.

Before discussing the references, it is important to note that Applicants have solved the problem regarding optimum diffusional selectivity in an external layer. In cited reference U.S. 2003/0121827 (International Patent Application WO 99/28031) specifies that the catalyst obtained comprises crystals of a first zeolite in a discontinuous layer of crystals of a second zeolite, and because of the discontinuity, the diffusional selectivity is less than optimum. Using electron microscopy, Applicants provide a core covered by a relatively uniform shell. The uniformity feature is expressed in the claims as a uniformity Criterion which is defined in the specification and in claim 1 as being equal to an average, on a number N of catalyst grain samples, of the ratio of the difference between the maximum thickness of the external layer and the minimum thickness of the same layer to the average of the two thicknesses, and with the provision that the grains have a spherical shape and have an overall average thickness of the external layer between 0.1 and 10 microns yield a maximum average grain of about 40 microns.

According to the inventors, there is no oral or written publication which discusses the uniformity as defined and it is the first time that a spherical catalyst is made of multiple grains formed by a core covered by a uniform shell. The uniformity criterion C is stated to be less than 0.30 in claim 1, and lower in claim 9 (0.2), about 0.1 in claim 14 and about 0.08 in claim 15.

Since these values have been obtained by electron microscopy, Applicants would agree to inserting such a statement, if deemed necessary for the allowance of the claims.

That the references do not suggest Applicants' invention in this highly crowded art of zeolite catalysis, is seen from the following discussion:

Koster U.S. 6,872,865

Contrary to the presently claimed invention, the reference discloses a layered crystalline composite of a single zeolitic isotype comprising a core and a mantle (column 2, lines 24-31, column 3, lines 22-23, column 4, lines 29-30 and line 64) with the core and the mantle of the composite being "crystallographically indistinct" (column 3, lines 28-30). Consequently, Applicants' claimed catalyst for which the zeolite of the core and the zeolite of the external layer are different is both new and unobvious over U.S. 6,872,865 since Koster directs the skilled worker away from preparing a composite catalyst in which the core and the external layer does not have the same crystallographic structure. Furthermore, the preparation process disclosed in U.S. 6,872,865 is not a suitable process for obtaining a uniform thickness of the mantle covering the core, as explained in detail in the accompanying expert Declaration Under 37 C.F.R. 1.132 by Dr. Kasztelan. An executed copy of the Declaration will be filed in the near future.

Stockwell et al. U.S. 5,082,814

This reference discloses a catalyst which is a composite microsphere containing an inner core containing zeolite and inorganic binders and/or matrices plus an outer coating comprising two essential components: at least one hydrous refractory metal oxide or silicate (hydrous clay : column 3, lines 30-32) and a refractory inorganic binder (sodium silicate solution : column 3, line 44). Since the outer coating is not a zeolite, the combination of U.S. 6,872,865 with U.S. 5,082,814 teaches the skilled worker away from preparing a composite catalyst in which the core and the external layer are both zeolites, but which do not have the same crystallographic structure. Moreover, U.S. 5,082,814 does not disclose a preparation process involving a specific nanosized nuclei adhesion procedure with fixation of nanocrystals from which the external layer

grows (as in the claimed invention, see Declaration enclosed) and therefore can, in no way, lead to a composite as claimed in present claim 1.

Twaiq et al. (Fuel Processing Technology, 85 (2004) 1283-1300)

This reference discloses a composite material containing an inner core of zeolite ZSM-5 covered with a layer of a mesoporous molecular sieve. On the contrary and as already stated in Applicants' response to the first Office Action, the catalyst as claimed in claim 1 is made of an inner core covered with a crystallized microporous zeolitic solid. It is known that zeolites are microporous material and not mesoporous material (see attached extract from Molecular Sieves, Second edition, 1998, page 22 (chapter 1.6.3. microporous materials) and therefore the combination of U.S. 6,872,865 with Twaiq cannot make render the claimed invention obvious.

Van den Berge U.S. 2003/0121827

This reference discloses a coated zeolite catalyst in which a second zeolite crystals covers at least a portion of the external surface of the first zeolite crystals ([0014]) and ([0015]). This document is not at all relevant since the second zeolite crystals are uniformly deposited on the first crystals (([0016]), which is entirely the opposite teaching of the present invention wherein the uniformity index of the thickness of the external layer is recited.

Accordingly, the cited references actually teach away from the present invention.

In view of the above remarks, favorable reconsideration is courteously requested. If, however, there are any residual matters which can be expeditiously resolved by a telephone conference, the Examiner is courteously invited to telephone Counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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